REMARKS

File History

Claims 1-5, 8-21, 25, 26, and 28-31 were previously pending in the application. In the outstanding Office action (OA) of 3/19/2010, the following rejections, objections, requirements and other actions appear to have been made:

- **Claims 1-2, 8-9, 13-16, 19-21, 25-26, and 28-31** were rejected under 35 USC §103(a) as being obvious over **Mori** et al. (US 6,326,981) {= ref **#1**} as combined with **Martin** et al. (US 6,714,206) {= ref **#2**} { OA pg. 5, ¶ 5 }

- **Claims 5, 12** were rejected under 35 USC §103(a) as being obvious over **Mori** {1} as combined with **Francis** (US 5,841,411) {= ref **#3**} { OA pg. 18, ¶ 6 }

- **Claims 13, 14, 25, and 31** (and their dependencies) were rejected under 35 USC §112, first paragraph, as failing to comply with the written description requirement. { OA pg. 3, ¶ 3 }

Summary of Current Response

Claim 15 is amended to correct a typographic error.

Claims 32-35 are newly presented.

Support for Newly Submitted Claim 32

Referring first to application Fig. 6, shown there is a configuration where the top two rows are driven by a positive-initiated (+ +), in-row dot inversion scheme and where the lower two illustrated rows are driven by a negative-initiated (- -), in-row dot inversion scheme. As a consequence, inversion occurs in the columnar direction as between each group of two adjacent rows. Also, as a consequence, inversion occurs in the row direction as

between adjacent subpixels except that there is a violation of this scheme in localized area 606 because the blue subpixels of column 108 are followed to their right by same polarity other subpixels (R and G) in the next column.

This condition is explained in ¶ [0027]-[0028] of corresponding early publication 2005/0083277

> [0027] FIG. 6 is yet another embodiment of a panel 600 comprised substantially of a *subpixel repeating group 602* of even modulo. In this case, group 602 is comprised of a checkerboard of red 104 and green 106 subpixels interspersed with two columns of blue 108 subpixels. As noted, it is possible (but not mandatory) to have the blue subpixels of smaller width than the red or the green subpixels. As may be seen, two neighboring columns of blue subpixels may share a same column driver through an interconnect 604, possibly with the TFTs of the blue subpixels appropriately remapped to avoid exact data value sharing.
>
> [0028] With standard column drivers performing **2.times.1 dot inversion**, it can be seen that blue subpixel column 606 has the same polarity as the column of red and green subpixels **to its immediate right**. Although this may induce image degradation (which may be compensated for with some correction signal), it is advantageous that the degradation is localized on the dark colored (e.g. blue) subpixel column; and, hence, less visible to the human eye.
>
> [Emphasis added.]

While the application, as originally written, chose to call the double row RBGB/GBRB construct (the two row construct identified as 602) as a "subpixel repeating group 602 of even modulo" in above reproduced ¶ [0027]; Applicant is within rights here to coin the term, "primitive subpixel repeating group" for the included and more primitive, one row construct: RBGB which is understood from Fig. 6 to also populate the screen in a tessellated manner, albeit that the RBGB primitive construct of the second row is staggered in the row direction relative to the RBGB primitive construct of the first row, and so on.

The here-coined term of "primitive subpixel repeating group", for which an example is provided by the RBGB construct of the top half of the 602 double row RBGB/GBRB construct satisfies all the recitations of here presented new Claim 32, namely:

- (1) It is the "smallest chooseable repeating group among possible repeating groups substantially tessellating the panel";

- (2) The "said primitive repeating group [[*is one*]] having an even number of subpixels [[*e.g., 4*]] where at least two of them [[*R and G*]] are individually addressable subpixels and [[*is one having*]] an even number of columns" [Bracketed text added.]

- (3) The "said primitive subpixel repeating group [[*is one which is*]] being tessellated in a staggered manner over said panel so as to thereby define both multi-colored columns [[*e.g. having R and G*]] and spaced apart uni-colored columns [[*e.g., the Blue-only thin columns 108 of Fig. 6*]] , the uni-colored columns each consisting of subpixels of just one of said first through third different colors" [Bracketed text added.]

- (4) The illustrated polarity scheme of Fig. 6 is one "wherein said driver circuit uses a multi-row inversion polarity scheme that uses a same polarity start of inversion [[*e.g., + and + in the start of top 2 rows of Fig. 6 but - and - in the start of bottom 2 rows*]] within groups of adjacent rows [[*e.g., every pair of rows*]] but nonetheless provides dot inversion in the columnar direction as between ~~adjacent rows or~~ [[*see under area C of Fig. 3 for struck-out text to the left of here*]] as between one group of the adjacent rows and the next group and which further provides subpixel-to-subpixel dot inversion in the row direction substantially across each row but sporadically violates the in-row dot inversion polarity scheme in localized areas [[*e.g. in circled area 606 of Fig. 6*]]" --[Bracketed text added.]

- (5) The illustrated scheme of Fig. 6 is such that "where the localized areas of violation each includes one of the first colored subpixels [[*the Blue subpixels of column 108*]] such that potential image degradation introduced by the sporadic violation of the in-row dot inversion polarity scheme is localized to be lessened by said lower sensitivity to change of luminance of the first colored subpixels."

With regard to the one aspect of Claim 32 that on first blush appears not to be supported by the exemplary embodiment of Fig. 6, namely, in above portion (4): "but nonetheless provides dot inversion in the columnar direction as between adjacent rows or", this aspect actually is supported by Fig. 6 because row-to-adjacent row dot inversion is present as between the second and third rows. Moreover, such row-to-adjacent row dot inversion in the columnar direction is present as between the R and G subpixels under box C of Fig. 3.

Since it is shown above that Claim 32 as here submitted is fully supported by the application as originally filed, it is respectfully submitted that no new matter is present and the written description requirement is fully met. Consideration and examination of Claim 32 is respectfully requested.

Removal of the Mori reference as a viable teaching against Claim 32

The smallest chooseable, and thus "primitive" subpixel repeating group in Mori Fig. 15 is the GBG/RBR double row structure defined as "ONE PIXEL" in Mori Fig. 15. This primitive GBG/RBR double row structure does not have an even number of columns and it is not tessellated in a staggered manner over the panel.

No teaching has been identified in Mori that meets the criteria of here presented Claim 32. (In Mori Fig. 5B, the primitive is the 3 row structure: RG/BR/GB. While it does have an even number of columns; it is not tessellated in a staggered manner over the panel.) Since Mori lacks such a teaching, it cannot be used as the foundation for a §103 rejection against Claim 32 based on such a teaching.

The other newly presented claims 33-35 should be allowed over Mori taken alone or in combination for similar reasons.

Traversal of 112 rejection re Claims 1, 8 and 13

Par. 15 of Early Pub 2005/0083277 the application provides as follows:

[0015] As also shown, each subpixel is connected to a column line (each driven by a column driver 110) and a row line (e.g. 112 and 114). In the field of AMLCD panels, it is known to drive the panel with a dot inversion scheme to reduce crosstalk or flicker. FIG. 1A **depicts one particular dot inversion scheme--i.e. 1.times.1 dot inversion--that is indicated by a "+" and a "-" polarity given in the center of each subpixel.** Each row line is typically connected to a gate (not shown in FIG. 1A) of TFT 116. Image data--delivered via the column lines--are typically connected to the source of each TFT. Image data is written to the panel a row at a time and is given a polarity bias scheme as indicated herein as either ODD ("O") or EVEN ("E") schemes. **As shown, row 112 is being written with ODD polarity scheme at a given time while row 114 is being written with EVEN polarity scheme at a next time. The polarities alternate ODD and EVEN schemes a row at a time in this 1.times.1 dot inversion scheme.**

[Emphasis added.]

It is respectfully submitted, that from the above, one skilled in the art can know what a periodic dot inversion polarity scheme means without additional explanation. Thus the 112 rejection regarding periodic dot inversion polarity scheme is believed to be without merit.

Regarding claim 13, the Office action alleged that the technical feature of "it primarily impacts the at least one column of blue subpixels" is not reasonable because violation of dot inversion polarity scheme impacts green subpixels as well as the blue subpixels.

However, using the term of "primarily" in light of the specification cannot be reasonably seen as meaning or intending the excluding of other subpixels that are not blue subpixels. Furthermore, the technical feature is supported by the following Par. 22. Thus, the rejection is respectfully believed to be not reasonable.

<Par. 22>

[0022] One such technique is to choose which subpixels are to be degraded, if degradation may not be avoided. **In FIG. 3, the phasing is designed so as to localize the same-polarity occurrence on the circled blue subpixels 302.** In this manner, the polarity of same color subpixels along a row is inverted every two driver chips, which will minimize or eliminate the horizontal image degradation. The periodic circled blue subpixels 302 will be slightly darker (i.e for normally-black LCD) or lighter (i.e. for normally-white LCD) than other blue subpixels in the array, but since the eye is not as sensitive to blue luminance changes, the difference should be substantially less visible.

[Emphasis added.]

Traversal of Rejection of Claim 1

With regard to Claim 1, the §103 rejection is based on Mori and Martin.

Claim 1 calls for 3 different colors in a single row.

However in Mori Fig. 15, each row has only 2 different colors. The top row of Mori Fig. 15 has only B and G. The second row of Mori Fig. 15 has only B and R.

Similarly in Martin Fig. 2, the topmost row of the pentile structure has only R and G, the middle row has only B and the bottom row has only R and G.

Applicant also submits that combining of Mori and Martin is not suggested by or otherwise made apparent by the prior art. The pentile structure of Martin is substantially different than the more conventional rectangular array arrangement of Mori. Each of these structurally different arrangements can have very different behaviors in terms of, not only cross talk as between adjacent subpixels, but also in terms of visual artifacts that may present themselves to the unpredictable and complex human visual system. As a result, there is no suggestion to modify Mori to obtain the technical features of the present Claim 1.

More specifically, Mori does not teach or suggest: "such that potential image degradation introduced by the periodic dot inversion polarity scheme is localized on said one or more of the columns of first colored subpixels" and the outstanding grounds have not demonstrated otherwise.

Independent Claims 8, 13, 15 and 20 include technical features similar to those of Claim 1 and thus the arguments presented in support of Claim 1 should be applicable to Claims 8, 13, 15 and 20 as well. Reconsideration is respectfully requested.

CONCLUSION

It is believed that all outstanding grounds of rejection have been overcome or traversed in light of the foregoing. Applicant respectfully requests entry of the amendments and reexamination with favorable outcome. A 3 month extension of time is requested.

Authorization is hereby given to charge any fees due or credit any overpayments in regard to this communication to deposit account 50-5029. If the Examiner has any questions or concerns, a telephone call to the below listed attorney at (408) 331-1675 is welcomed and encouraged.

Certification of Electronic Transmission

Certificate of Transmission: I hereby certify that this correspondence is being transmitted to the United States Patent and Trademark Office (USPTO) via the USPTO's EFS-Web electronic system on:

September 09, 2010

Typed or printed name of person signing this certificate:

Gideon Gimlan

Signature: /gideon gimlan/

Respectfully submitted,

/gideon gimlan/
Gideon Gimlan
Attorney for Applicants
Reg. No. 31,955

Gideon Gimlan, Esq.
Innovation Counsel LLP
21771 Stevens Creek Blvd. Suite 200
Cupertino, CA 95014
Voice: (408) 331-1675
email: ggimlan@innovationcounsel.com